The ‘Wow Effect’
Revolutionary SmartPulse Technology for treatment with SCHWIND AMARIS®
The ‘Wow Effect’ in the early postoperative phase

The new SmartPulse Technology used in the SCHWIND AMARIS product family optimizes the smoothness of the corneal surface. AMARIS patients experience a real ‘wow effect’ when they notice how well they can see immediately after surgery. After a month, results are equally excellent with or without SmartPulse, confirming the high stability and quality of outcomes achieved with AMARIS technology.

With SmartPulse, SCHWIND’s AMARIS technology continues as a pacesetter in refractive corneal surgery. SCHWIND developed this innovative feature in cooperation with lead investigator Dr. David Lin in Canada, to accelerate visual acuity recovery after treatment. The starting point was the recognition that a smoother cornea has a positive effect on vision, particularly during the first few days after treatment.

The graphic shows local deviations in microns in the 3 to 6 mm diameter area. The cornea is significantly smoother with SmartPulse. Over the entire surface, roughness declines from about one pulse (0.75 µm) to a third of a pulse (0.25 µm).
Fullerene structure for realistic cornea definition
SCHWIND researchers analysed the factors favouring corneal smoothness. Based on that, they redefined the ablation profile in terms of geometric structure, pulse definition and pulse distribution. SmartPulse uses a sophisticated geometric model based on a fullerene structure. This three-dimensional model describes the curvature of the cornea very realistically, and the fullerene structure makes it possible to position the pulses more closely than before. This is particularly marked at the periphery of the cornea. The latest measurement and analysis methods also help make optimum use of the spot geometry. The totality of the innovations in SmartPulse results in a very smooth corneal surface.

Suitable for all treatment methods
SmartPulse improves vision quality in the early postoperative phase of all treatment methods, whether stromal or surface.

The effect of a very smooth cornea surface is most evident with surface treatments, where neither a LASIK flap nor epithelium helps smooth the stromal surface before regeneration.
TransPRK treatment with SmartPulse gives excellent outcomes

TransPRK multi-centre outcomes with over 1000 eyes document the exceptionally high efficacy of SmartPulse. Visual acuity (VA) recovers significantly faster than when SmartPulse is not used. In addition, higher early postoperative VA has been observed. In fact, immediately after treatment VA was comparable to results after FemtoLASIK. Doctors participating in the study also reported faster regeneration of the epithelium, by about a day, and lower postoperative pain experienced by patients.

Take home messages

- Fullerene structure provides great corneal smoothness.
- ‘Wow effect’ for patients immediately following treatment.
- Very rapid recovery of visual acuity.
- Exclusively positive feedback from patients.
- Beneficial for all treatment methods.

Statements

David Lin, MD, Canada, primary investigator

“We are at the front edge of a paradigm shift in refractive surgery. Most patients comment that, immediately after transepithelial PRK, they are seeing almost as previously with their glasses. Further advantages are no flap or complicated intraprocedural risks. SmartPulse has brought the ‘Wow’ effect to transepithelial PRK.”

Michiel Luger, MD, Netherlands

“Immediately at the end of the procedure it is striking how smooth the stromal bed is. SmartPulse Technology is reflected in good vision on day one. Now even TransPRK patients walk out the door with reassuringly good vision right after surgery.”

David Kang, MD, Korea

“The quality of the smoothness is great.”

Jerry Tan, MD, Singapore

“SmartPulse Technology has not only smoothened the post-laser ablation surface, it has vastly increased the speed of visual recovery for not only post-PRK and post-LASEK patients, but in addition has dramatically improved my post-LASIK patients’ visual recovery. What took hours to achieve in visual recovery now takes minutes. Most of my post-LASIK patients see an immediate improvement in their vision when they get up from the AMARIS treatment bed. The ‘Wow’ is now and not in 24 hours.”

---

1 based on SCHWIND Multi-Centre Evaluation (see previous page)